

## New treatment may aid Tourette patients

Paul Sanberg and colleagues recently reported (see ARRI 12/2) that nicotine significantly reduces the symptoms of Tourette syndrome (TS). The same researchers now report that mecamylamine, a drug that *blocks* the action of nicotine, also causes remarkable improvement in many individuals with TS.

The researchers tested mecamylamine, a blood pressure drug withdrawn from the market in 1977 due to low usage, on 13 patients with Tourette syndrome (four adults and

nine children). According to Sanberg et al., 11 of the 13 exhibited significantly fewer motor and vocal tics during treatment. They add, "Many of these 11 patients also reported an improvement in mood, in particular, decreased irritability and aggression."

"The children [taking mecamylamine] function better socially," study co-author Archie Silver comments. "They function better in school."

It seems odd that a drug that blocks nicotine's action would have effects similar to nicotine's. Researcher John Rosecrans speculates that the two substances affect different sites, thus causing the same effect through different pathways. It appears that both substances may desensitize acetylcholine receptors and/or stabilize dopamine-releasing cells in the brain.

Sanberg et al. say that unlike other drugs used to treat Tourette syndrome, mecamylamine appears to have few side effects. At the low dosage used in this study (an average of 2.5 mg/day), the only side effects seen were low blood pressure and constipation.

The researchers are now organizing a placebo-controlled study of mecamylamine's effects on Tourette syndrome, to be conducted at ten medical centers in the United States. Results of the study will be published in 1999. In addition, the researchers plan to investigate the drug's effectiveness as a treatment for attention deficit hyperactivity disorder, obsessive compulsive disorder, and other neuropsychiatric disorders.

### Nicotine for ADHD, other disorders?

Sanberg and colleagues are focusing on the use of mecamylamine for psychiatric disorders because the drug appears to have fewer adverse effects than nicotine patches (which can cause nausea and itchy skin). However, Rosecrans reports that researchers are actively investigating the use of nicotine for a variety of psychiatric conditions. Among the studies he cites:

• One research group found that non-smoking patients suffering from depression showed short-term improvements in mood when given nicotine patches. The subjects also showed increases in REM (rapid eye movement) sleep, which is often reduced in depressed patients.

• Noting that people with attention deficit hyperactivity disorder (ADHD) are much more likely to smoke than other people, researchers gave nicotine patches to smokers and non-smokers with ADHD. Both

groups showed improved scores on the Clinical Global Impressions scale during treatment.

• Researchers report that when schizophrenic patients are given nicotine via a patch or gum, they can process auditory or visual stimuli in a manner more similar to non-disabled people.

"Research in our laboratory with rats," Rosecrans says, "has indicated that nicotine has an unusual quality: it tends to have a 'normalizing' effect on behavior. Highly aroused rats tend to calm down, while under-aroused rats tend to be stimulated." He suggests that many smokers use tobacco not because it is addictive, but because they are self-medicating psychiatric symptoms.

*Editor's note: To our knowledge, no one has explored the effects of nicotine on symptoms of autism. We would be interested in hearing from any researchers investigating this topic.*

"Treatment of Tourette's syndrome with mecamylamine," P. R. Sanberg, R. D. Shytle, and A. A. Silver; *The Lancet*, Vol. 352, No. 9129, August 29, 1998, pp. 705-706. Address: P. R. Sanberg, Department of Surgery, University of South Florida College of Medicine, Tampa, FL 33612-4799.

—and—

"Research finds old drug may help treat Tourette's syndrome," *Florida Today*, August 29, 1998.

—and—

"Nicotine: helping those who help themselves?" John A. Rosecrans, *Chemistry and Industry*, July 6, 1998. Address: John Rosecrans, Dept. of Pharmacology and Toxicology, Virginia Commonwealth University, Richmond, VA 23298.

—and—

"Nicotine effects on adults with attention-deficit/hyperactivity disorder," E. D. Levin, C. K. Conners, E. Sparrow, S. C. Hinton, D. Erhardt, W. H. Meck, J. E. Rose, and J. March; *Psychopharmacology (Berl)*, Vol. 123, No. 1, 1996, pp. 55-63. Address: E. D. Levin, Department of Psychiatry, Duke University Medical Center, Durham, NC 27710.

The same researchers who discovered that nicotine can reduce symptoms of Tourette syndrome now report that a drug that *blocks* nicotine's actions also aids individuals with the disorder.

## Prozac: positive findings in children with family histories of depression

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effects surpassed those of other treatment modalities." The researchers attempted to withdraw the drug in all but one case, and report that "discontinuation of successful treatment nearly always resulted in prompt regression."

DeLong et al. say that children with a family history of depression had the best response to fluoxetine treatment. "Overall," they say, "of 21 subjects with a family history of major affective disorder (bipolar or unipolar), 18 had a positive response to fluoxetine, and eight [of these] had an excellent result. Ten other children had a positive psychiatric family history not including major affective disorder, of whom only one had a positive response." The researchers note that as many as two-thirds of children with autism of unknown cause have family histories of major affective disorder, and that many autistic children exhibit symptoms similar to those of childhood bipolar disorder or depression.

The researchers add that since this study was published, the total number of patients receiving fluoxetine treatment in their program has grown to 68. The results of fluoxetine treatment on this larger group of subjects, they say, are roughly comparable to the results reported in the initial study.

"Effects of fluoxetine treatment in young children with idiopathic autism," G. Robert DeLong, Lou Anne Teague, and Myra McSwain Kamran; *Developmental Medicine & Child Neurology*, Vol. 40, pp. 551-562, 1998. Address: G. Robert DeLong, Division of Pediatric Neurology, Box 3936, Duke University Medical Center, Durham, NC 27710.

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